

WHAT IS CLAIMED IS:

1. An apparatus for driving a plasma display panel, which is for applying a driving voltage to a panel capacitor formed between first and second electrodes, the apparatus comprising:

5 a first switch and a second switch coupled in series between a first power source for supplying a first voltage and a first terminal of the panel capacitor, the first switch and a second switch having a first capacitor and a second capacitor formed between both terminals thereof, respectively;

10 a third switch and a fourth switch coupled in series between the first terminal of the panel capacitor and a second power source for supplying a second voltage, the second voltage being a voltage lower than the first voltage, the third switch and a fourth switch having a third capacitor and a fourth capacitor formed between both terminals thereof, respectively;

15 a first diode coupled in a backward direction between a contact of the first switch and a second switch and a third power source for supplying a third voltage, the third voltage being a voltage between the first and second voltages; and

a second diode coupled in a forward direction between a contact of the third switch and a fourth switch and the third power source, wherein:

20 the first voltage and the second voltage being alternately applied to the first terminal of the panel capacitor when the first switch and the second switch, and the third switch and the fourth switch are alternately turned on, and

the first capacitor has a lower capacitance than the second capacitor, and the third capacitor having a higher capacitance than the fourth capacitor.

2. The apparatus of claim 1, wherein the first switch, second switch, third switch and fourth switch include a field effect transistor, and

the first capacitor, second capacitor, third capacitor and fourth capacitor is a parasitic capacitor of the first switch, second switch, third switch and fourth switch, respectively.

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3. The apparatus of claim 1, wherein the difference between the first voltage and the second voltage is a voltage necessary for a sustain of the panel capacitor.

4. The apparatus as claimed in claim 1, further comprising:

10 an inductor coupled to the first terminal of the panel capacitor, wherein the panel capacitor is substantially fully charged to the first voltage or the second voltage by a resonance between the inductor and the panel capacitor.

5. The apparatus of claim 1, wherein the second voltage is applied to a second
15 terminal of the panel capacitor while the first voltage is applied to the first terminal of the panel capacitor, and

the first voltage being applied to the second terminal of the panel capacitor while the second voltage is applied to the first terminal of the panel capacitor.

20 6. The apparatus of claim 5, further comprising:

a fifth switch and a sixth switch coupled in series between the first power source and the second terminal of the panel capacitor, the fifth switch and the sixth switch having a fifth capacitor and a sixth capacitor formed between both terminals thereof, respectively;

a seventh switch and an eighth switch coupled in series between the second terminal of the panel capacitor and the second power source, the seventh switch and the eighth switch having a seventh capacitor and an eighth capacitor formed between both terminals thereof, respectively;

a third diode coupled in a backward direction between a contact of the fifth switch and the sixth switch and the third power source; and

a fourth diode coupled in a forward direction between a contact of the seventh switch and the eighth switch and the third source, wherein

the fifth capacitor has a lower capacitance than the sixth capacitor, and the seventh capacitor having a higher capacitance than the eighth capacitor.

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7. An apparatus for driving a plasma display panel, which is for applying a driving voltage to a panel capacitor formed between a first electrode and a second electrode, the apparatus comprising:

a first switch and a second switch coupled in series between a first power source for supplying a first voltage and a first terminal of the panel capacitor, the first switch and the second switch having a first capacitor and a second capacitor formed between both terminals thereof, respectively, wherein

the first voltage and the second voltage are alternately applied to the first terminal of the panel capacitor,

a first electric path is formed between the first switch and the second switch and a third voltage while the first and second switches are turned off to apply the second voltage to the first terminal of the panel capacitor, the third voltage being a voltage between the first and second voltages, and

the first capacitor has a lower capacitance than the second capacitor.

8. The apparatus of claim 7, wherein the first switch and the second switch include field effect transistors, and

5 the first capacitor and the second capacitor is a parasitic capacitor of the first switch and the second switch, respectively.

9. The apparatus of claim 7, further comprising:

a diode coupled between a contact of the first switch and the second switch and the third
10 voltage so as to form the first electric path.

10. The apparatus of claim 7, further comprising:

a third and a fourth switch coupled in series between the first terminal of the panel capacitor and a second power source for supplying the second voltage, the third switch and the
15 fourth switch having a third capacitor and a fourth capacitor formed between both terminals thereof, respectively,

a second electric path being formed between a contact of the third switch and the fourth switch, and the third voltage while the third switch and the fourth switch are turned off to apply the first voltage to the first terminal of the panel capacitor, wherein the third capacitor has a
20 higher capacitance than the fourth capacitor.

11. The apparatus of claim 7, further comprising:

a fifth switch and a sixth switch coupled in series between the first power source and a second terminal of the panel capacitor, the fifth switch and a sixth switch having a fifth capacitor and a sixth capacitor formed between both terminals thereof, respectively; and

a seventh switch and an eighth switch coupled in series between the second terminal of the panel capacitor and the second power source, the seventh switch and the eighth switch having a seventh capacitor and an eighth capacitor formed between both terminals thereof, respectively,

a third electric path being formed between a contact of the fifth switch and the sixth switch and the third voltage while the fifth switch and the sixth switch are turned off to apply the second voltage to the second terminal of the panel capacitor,

a fourth electric path being formed between a contact of the seventh switch and the eighth switch and the third voltage while the seventh switch and the eighth switch are turned off to apply the first voltage to the second terminal of the panel capacitor, wherein the fifth capacitor has a lower capacitance than the sixth capacitor, and the seventh capacitor having a higher capacitance than the eighth capacitor.

12. The apparatus of claim 7, wherein the difference between the first voltage and the second voltage is a voltage necessary for a sustain of the panel capacitor, and the third voltage being a voltage between the first and second voltages.

13. The apparatus of claim 7, further comprising:
an inductor coupled to the first terminal of the panel capacitor; and
a power recovery section for changing a voltage of the first terminal of the panel capacitor using a resonance between the inductor and the panel capacitor.

14. The apparatus of claim 13, wherein the power recovery section injects a current to the inductor using a voltage difference between the first voltage of the first power source and the third voltage, and causes the resonance while the current flows to the inductor.

5 15. A method for driving a plasma display panel, by alternately applying a first voltage and a second voltage to a panel capacitor formed between a first electrode and a second electrode, the method comprising:

turning off a first switch and a second switch coupled between a first terminal of the panel capacitor and a first power source for supplying the first voltage, and applying the second
10 voltage to the first terminal of the panel capacitor; and

forming a first electric path between a contact of the first switch and the second switch, and a third voltage, the third voltage being a voltage between the first voltage and the second voltage,

wherein a first capacitor formed between both terminals of the first switch has a lower
15 capacitance than a second capacitor formed between both terminals of the second switch.

16. The method of claim 15, wherein the step of turning off comprises: applying the first voltage to a second terminal of the panel capacitor.

20 17. The method of claim 15, wherein the step of turning off the first switch and the second switch comprises:

turning on a third switch and a fourth switch to supply the second voltage to the first terminal of the panel capacitor, the third switch and the fourth switch being coupled in series

between the first terminal of the panel capacitor and a second power source for supplying the second voltage.

18. The method of claim 17, further comprising:

5 turning off the third switch and the fourth switch and turning on the first switch and the second switch to apply the first voltage to the first terminal of the panel capacitor; and

forming an electric path between a contact of the third switch and the fourth switch and the third voltage.

10 19. The method of claim 15, further comprising:

changing a voltage of the first terminal by using a resonance between the panel capacitor and an inductor coupled to the first terminal, prior to applying the second voltage to the first terminal of the panel capacitor.

15 20. The method of claim 19, further comprising:

injecting a current to the inductor by using a difference between the first voltage and the third voltage, prior to the step of changing a voltage of the first terminal.